

Benzalkonium chloride. A potential disinfecting irrigation solution for orthopaedic wounds.

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The efficacy of benzalkonium chloride was evaluated as an irrigating solution for the eradication of *Staphylococcus aureus* from a contaminated orthopaedic wound. Thirty Sprague Dawley rats were randomized into two groups. A stainless steel wire was placed in a lumbar spinous process, and the wound was inoculated with 10(7) or 10(6) colony forming units of *Staphylococcus aureus*. The wound was irrigated with 1 L of normal saline or 0.1% benzalkonium chloride solution. The animals were sacrificed, and cultures were obtained. Rats inoculated with 10(7) colony forming units of *Staphylococcus aureus* and irrigated with benzalkonium chloride had a significant decrease in the total number of positive cultures, deep wound cultures, and stainless steel wire cultures. Rats inoculated with 10(6) colony forming units of *Staphylococcus aureus* and irrigated with benzalkonium chloride also had a significant decrease in the total number of positive cultures, deep wound cultures, and stainless steel wire cultures. In a parallel noninoculation study, histologic evaluation of tissues did not show toxicity in the rats irrigated with benzalkonium chloride. This study shows that benzalkonium chloride is more effective than normal saline as an irrigating agent for eradicating *Staphylococcus aureus* from a contaminated orthopaedic wound.

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